

## ABSTRACT

A method for inspection of a sample includes irradiating the sample with a polychromatic beam of X-rays, comprising X-ray photons having a range of respective photon energies. The X-rays scattered from the sample are received at a plurality of scattering angles using one or more sensors, which generate output signals indicative of the respective photon energies of the X-rays photons that are incident thereon. The output signals are analyzed based on the photon energies so as to determine a scattering profile of the sample at a selected photon energy within the range.